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CORRES. CONTROL
OUTGOING LTR NO.

93RF4848

DIST.	LTR	ENC
BENEDETTI, R.L.	X	
BENJAMIN, A.		
BERMAN, H.S.		
BRANCH, D.B.		
CARNIVAL, G.J.		
COPP, R.D.		
DAVIS, J.G.		
FERRERA, D.W.		
HANNI, B.J.		
HARMAN, L. K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
KIRBY, W.A.		
KUESTER, A.W.		
LEE, E.M.		
MANN, H.P.	X	
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RILEY, J.H.		
SANDLIN, N.B.		
SHEPLER, R.L.		
STEWART, D.L.		
SULLIVAN, M.T.		
SWANSON, E.R.		
WILKINSON, R.B.	X	
WILLIAMS, S. (ORC)		
WILSON, J. M.		
ZANE, J. O.		
Overgaard, TCA		
Hutchins, NM	X	
Smith, DM	X	
Busby, LJS	X	
Gay, CB	X	
Lee, E	X	
Ogg, K	X	
O'Keefe	X	
CORRES CONTROL	X	X
ADMIN RECORD		
TRAFFIC		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
Not Req'd per Classification
DATE Office Exemption

IN REPLY TO RFP CC NO:
N/A

ACTION ITEM STATUS
☐ OPEN ☐ CLOSED
☐ PARTIAL

LTR APPROVALS:
TCG: NMH:
ORIG & TYPIST INITIALS
DMS:cet

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June 30, 1993 93-RF-4848

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Environmental Management
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SITEWIDE RISK ASSESSMENT IMPACTS OF THE OPERABLE UNIT NO. 1 (OU 1) COMMENT RESOLUTION - RLB-209-93

Refs: (a) J. K. Hartman ltr (10318) to J. M. Kersh, Data Analysis for the Baseline Risk Assessment (BRA) at RFP Operable Unit No. 1, September 14, 1992

(b) R. L. Benedetti ltr, RLB-0655-92, to R. M. Nelson, Jr., Data Analysis for the Baseline Risk Assessment at RFP Operable Unit No. 1, October 14, 1992

This letter is to inform you of recent developments in the area of the Human Health Risk Assessment (HHRA) that constitute significant changes in our technical baseline cost and schedule assumptions and that will increase the budgeted costs for the Baseline Risk Assessment (BRA) for all OUs.

The OU 1 comment resolution process concerning the risk assessment portion of the RCRA Facilities Investigation/Remedial Investigation (RFI/RI) report has recently come to a close. A number of items have been resolved in a way during the OU 1 resolution process that will significantly impact the scope, schedule and budgets at other operable units. The scope of the HHRAs has measurably increased over the baseline condition, and these increases will cause the budgets for the assessments to probably double and maybe triple (the non-computer modeling portion of the HHRA would increase from $300K to between $600K and $900K). Of greater concern is the delay in Interagency Agreement milestones. Schedules will also need to be increased by four to nine months to accommodate the additional work. The following scope increases are the major reasons for increased costs and schedules:

1) The baseline budget condition for the HHRA assumed that one OU-wide HHRA would be performed at each OU. This baseline condition was discussed by EG&G and DOE representatives at the start of the OU 1 RFI/RI Report preparation, employing uncertainty analysis on distributed data. This was interpreted to address "risk at the source" as required by the IAG because all exposure point data, including that at "the source", was integrated. This initial interpretation of risk at the source constitutes the least costly method of assessment; however, as detailed in the referenced letter (reference b), partway through the OU 1 HHRA process, the scope was expanded at DOE's request to include a more conservative interpretation of risk at the source.

   In the comment resolution process, the term "at the source" has expanded to include individual assessments of risk at each source area, as well as the complementary assessment in which the OU-wide assessment is adjusted to exclude the source(s). The complementary assessment illustrates the impact on OU wide risk if exposure "at the source" were eliminated. In theory, this approach represents thorough risk analysis. Practically, however, exhaustive analysis of this nature is seldom cost effective and not commonly done in Superfund actions.

Document Classification
Review Waiver per RFP
Classification Office

Typically, the point of diminished return occurs well before the point of exhaustive analysis. Additional evaluation beyond the point of diminished return does not lead to better risk management decisions. Exhaustive analysis such as illustrated in Table 1 is costly to perform, particularly on OUs having multiple sources in different media (e.g., OUs 2, 5, 6 and 7).

The example in Table 1 illustrates the potential magnitude of scope increase.

For an OU with two localized but spatially separate sources of groundwater contamination, and two localized but spatially separate sources of surface soil contamination, the analysis matrix presented in Table 1 could result. As indicated, this assessment would result in one OU-wide assessment (Matrix cell A,1 exhaustive analysis), one complementary assessment (Matrix cell E, 5), three groundwater assessments (cells B, C, and D) and three soil assessments (cells 2, 3 and 4). Considering the complementary assessments to illustrate attributable risk from source areas the "at the source assessments" would number up to 25 considering the potential combinations. If four exposure scenarios are evaluated for each case, the total number of risk characterizations would be 100.

2) In addition to the combination source and complement assessment described above, comment resolution has led to additional analyses of potential anomalies. Potential anomalies are defined as reported detections of compounds at less than a 5% detection rate.

In summary, the expanded scope of assessment includes four characterizations: 1) an OU wide assessment integrating all reported data, 2) at the source assessments, 3) complementary at the source assessments and 4) anomaly assessments.

Although DOE was present during OU 1 negotiations, and apprised of the potential impacts of these developments as they were discussed, it is imperative that our concerns be quantified and documented. There have been other increases in scope through the comment resolution process, but these are dwarfed by the above scope increase.

These concerns echo some of the issues raised by EG&G in our October 14, 1992 letter (reference (b)). In that letter, we informed DOE of possible adverse cost and schedule impacts associated with extended consideration of evaluating risk at the source and IHSS specific risk characterization. As presented in reference (b) and in the May 18, 1993 risk assessment meeting, EG&G believed that IAG requirements to evaluate risk at the source would be adequately addressed by treating the point of exposure as a random variable and quantifying the range of exposures through statistical uncertainty analysis. Additionally, since the Reasonable Maximum Exposure (RME) required by EPA guidance and provided by EG&G requires use of the 95th percent upper confidence limit exposure concentration estimate, upper bound values reflective of source materials would be factored into the analysis.

Throughout the OU 1 discussions, the Environmental Protection Agency and the Colorado Department of Health affirmed that they felt that precedent was established for OUs 1 and 2 and they expected this type analysis on these OUs. However, the OU 2 approved work package funding will not support this level of effort. As a consequence, the exhaustive assessment of risk expected by the regulators will be provided on the OU 1 revision; it cannot be provided in the draft OU 2 HHRA without extension of the current schedule and approval of additional funding. EG&G believes EPA and CDH will expect this type assessment on all other OUs.

Impacts due to this scope increase are currently being evaluated relative to the budgets and schedules for all OUs. A major immediate concern is the potential impact on the OU 2 schedule which may not receive a schedule extension without resulting in increased fines and/or penalties. OU 4 may be affected and OU 7 is likely to be heavily impacted by this issue. Both OUs could be faced with negative schedule and budget impacts arising from this extended analysis.

In response to these issues, EG&G has formed a task force to assess the technical and regulatory basis for assessing risk at the source (as required by the IAG) and for addressing risk related to "Hot Spots" as required by Agency guidance. We anticipate providing a preliminary report of findings and recommendations to DOE by late July 1993.

If you have any questions or require further information, please do not hesitate to call D. M. Smith of Environmental Engineering & Technology at 966-8636.

R. L. Benedetti,
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Environmental Restoration Management
EG&G Rocky Flats, Inc.

DMS:cet

Attachment:
As Stated

Orig. and 1 cc - J. K. Hartman